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ConAgra Foods, Inc. Scientific and Regulatory Affairs Six ConAgra Drive Omaha, NE 68102

Tel: 402-595-7225 Fax: 402-595-6139

July 2, 2008

National Organic Standards Board Program Manager USDA/AMS/TM/NOP Room 4008 South Ag Stop 0268 1400 Independence Avenue, SW Washington, DC 20250

To Whom It May Concern:

ConAgra Foods is submitting a petition to the National Organic Standards Board for the inclusion of propane on the National List for the National Organic Program. The addition of propane to the National List will allow organic aerosol products to produce less Volatile Organic Compound (VOC) emissions than the current product.

This petition was prepared according to the guidelines given in the National List Petition Process section of the National Organic Program internet website as well as the corresponding Federal Register notice of January 18, 2007.

We believe that it is critical to add propane to the National List in order to allow propelled organic products to more actively assist in the reduction of VOC emissions.

If you have any question about this petition, please contact Susan Bond at 402-595-7225.

Sincerely,

Much Bewen for Susan Bond

Senior Director, Scientific and Regulatory Affairs

Petition to the National Organic Standards Board (NOSB) for:

Propane

Item A:

ConAgra Foods is petitioning to include propane in the National List category for "Nonagricultural (nonorganic) substances allowed in or on processed productions labeled as 'organic' or 'made with organic (specified ingredients)'", Section 205.605(b).

Item B:

- 1. Common Name: Propane
- 2. Manufacturer's name, address, and telephone number:

ConAgra Foods Inc. 6 ConAgra Drive Omaha, NE 68102 Phone: 402-595-7225

E-mail: susan.bond@conagrafoods.com

3. Intended or current use of the substance:

The intended use of propane is as a propellant in aerosol food products.

4. Crop, livestock, or handling activities for which the substance will be used:

Not applicable.

5. Substance source and manufacturing/processing procedures:

Propane is a naturally occurring component of natural gas. Liquid Petroleum Gases (LPG) is created from the decomposition of organic material over time. LPG is a combination of several different chemicals that are then separated. Trace contaminants normally found in commercial LPG, such as, water, hydrogen sulfide, mercaptans, oxygenates, and unsaturated hydrocarbons are removed using hydrogenation, fractionation, and molecular sieve sweetening technologies. This offers a cleaner, more consistent and stable hydrocarbon. One of the gases that is separated and purified during this process is propane.

6. Summary of previous certification review of propane:

To our knowledge, propane has not previously been reviewed by the NOSB for inclusion on the National List.

7. Regulatory agency registrations:

Propane is affirmed Generally Recognized as Safe (GRAS) in FDA regulations at 21 CFR 184.1655. This GRAS affirmation rule notes that the ingredient is used in food with no limitations other than current good manufacturing practices. The ingredient is used as a propellant, aerating agent, and gas as defined in FDA rules at 21 CFR 170.3(o)(25).

The European Commission has reviewed this compound for use in food aerosol application and stated there are no toxicological concerns with regard to propane being used in aerosol cooking sprays.

8. The Chemical Abstract Service (CAS) number or other product numbers:

CAS Reg. No.: 74-98-6

International Number System (INS) Number: 944 European Commission (EC) No.: 200-827-9

9. Physical properties and the chemical mode of action:

Molecular formula C_3H_8

Molecular weight 44.09 g/mol

Melting point not applicable, all liquids to extremely low temps

pH of 1% solubility (water, oil) neutral

Solubility in water at 25° C less than 0.1% (at 0°-50° C)

Propane is a liquefied gas aerosol propellant that, in combination with other gases (isobutane and butane also petitioned for organic status), acts as diluents in cooking sprays and provides sufficient pressure to expel the product in a spray form. Liquefied gas aerosol propellants (propane, butane, and isobutane) are defined as an essentially non-toxic material capable of exerting pressure in a sealed container at ambient temperatures. The advantages of these propellants include high purity, chemical stability, environmental acceptability, non-corrosive properties and low toxicity. The primary advantage of liquefied gas aerosol propellants is that the pressure obtained in an aerosol container will remain essentially constant over the duration of use of the product, thus eliminating the need for diffusing agents such as alcohol.

10. Safety Information:

Within normal constraints of product usage, there is no safety risk for propane. However, the gas ingredient itself has certain risks associated with it, such as flammability, asphyxiation, and frostbite (thermal burning).

Attached is a supplier Material Safety Data Sheet (MSDS) that provides additional safety information.

11. Bibliography/Review:

Carter, William PL, Computer Modeling of Environmental Chamber Measurements of Maximum Incremental Reactivities of Volatile Organic Compounds, *Journal of the Air and Waste Management Association*, January 25, 1995. 44, 881-899: http://pah.cert.ucr.edu/ftp/pub/carter/pubs/etcpap-2.pdf.

Carter, William PL, Development of Ozone Reactivity Scales for Volatile Organic Compounds, *Journal of the Air and Waste Management Association*, January 20, 1994. 44, 881-899: http://pah.cert.ucr.edu/ftp/pub/carter/pubs/reactpap.pdf.

Opinion on butane, butane and iso-butane as propellant gases for vegetable oil-based aerosol cooking sprays and water-based emulsion cooking sprays. European Commission Scientific Committee on Food, March 24, 1999: http://ec.europa.eu/food/fs/sc/scf/out26 en.pdf

Regulations for Reducing the Ozone Formed from Aerosol Coating Product Emissions, California Air Resource Board, http://www.arb.ca.gov/consprod/regs/aptmirtab.pdf. (Accessed March 20, 2008).

Regulations for Reducing the Volatile Organic Compound Emissions from Consumer Products, California Air Resource Board, http://www.arb.ca.gov/consprod/regs/cp.pdf. (Accessed March 20, 2008).

12. Petition Justification Statement:

Organic cooking sprays, aerosol products, have been sold throughout the U.S. since 2006. These products make up approximately 3% of all cooking sprays sold today and sales continue to increase steadily. Organic cooking sprays are formulated to include propellants that are organic or that are on the National Organic List.

Certain compounds used in aerosol products are known to contribute to ground level ozone formation. Ground level ozone, a major compound of "smog", is formed in the atmosphere by reactions of Volatile Organic Compounds (VOC) and oxides of nitrogen (NOx) in the presence of sunlight. The formation of ground level ozone is a complex process that is affected by many variables. VOC's are regulated because they are the precursors to ground level ozone.

VOC's have been typically regulated by the mass-based method, which is the percent of weight VOC of a compound in the product. However, the California Air Resources Board (CARB) has developed an alternative method of VOC regulation. This alternative method is called Reactivity, which is a scientific approach to determine the potential of a compound to create ozone.

One way to determine how much of the compound reacts in the atmosphere is to use a calculation called Maximum Incremental Reactivity (MIR). This calculation determines the maximum potential to create ozone by adding a compound to the "Base Reactive Organic Gas Mixture" per weight of compound added, expressed to one hundredth of a gram (g O₃/g Reactive Organic Compound). MIR values for individual compounds and hydrocarbon solvents are specified in section 94700 and 94701, Title 17, State of California Code of Regulations. This is the method for calculating VOC emissions California is proposing for cooking sprays.

Carbon dioxide is one of the few propellants on the National Organic List. The organic cooking spray products currently on the market are propelled using carbon dioxide. When carbon dioxide is used as the propellant, alcohol is required to disperse the oil and diffuse the compressed gas in the product so that it will propel though the can nozzle. Ethyl alcohol (ethanol) has a MIR of 1.69. It is common for a finished product using these compounds as the propellant to have a finished product MIR of 0.24. In order to reduce the amount of greenhouse gases produced by aerosol cooking sprays California has proposed an MIR value of 0.15.

ConAgra Foods is petitioning to add propane to the National Organic List. Propane has a MIR of 0.56, and can be used in combination with several other gases to successfully propel cooking spray products. When propane, isobutane and butane are used as the propellant in cooking sprays, alcohol is not needed in the formula. The combination of these gases will allow companies to produce products that meet consumer expectation and provide a product that has an MIR value of 0.15. The lowered MIR value will reduce the amount of VOC causing emissions from aerosol products by 30-40 percent.

GMA believes the entire cooking spray category has the potential to reduce VOC's by 175,000 pounds per year in California. If propane is not accepted on the National Organic List, companies that produce Organic Cooking Sprays will be required to continue to use carbon dioxide as a propellant and alcohol. Carbon dioxide and alcohol will have a greater adverse effect on the environment.

DIVERSIFIED CPC INTERNATIONAL, INC.

Aeron®

MATERIAL SAFETY DATA SHEET

AERON A-108 (Propane)

REVISION DATE: Dec-2006

EMERGENCY TELEPHONE NUMBERS:

(815) 423-5991 CHANNAHON PLANT

(800) 424-9300 CHEMTREC

(APPROVED BY U.S. DEPARTMENT OF LABOR 'ESSENTIALLY SIMILAR 'TO FORM LSB-OOS-4) INFORMATION ON THIS FORM IS FURNISHED SOLELY FOR THE PURPOSES OF COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND SHALL NOT BE USED FOR ANY OTHER PURPOSE. USE OR DISSEMINATION OF ALL OR ANY PART OF THIS INFORMATION FOR ANY OTHER PURPOSE OR PURPOSES IS ILLEGAL.

PRODUCT NAME:

AERON A-108 (Propane)

SECTION I PRODUCT IDENTIFICATION

CAS REGISTRY #: 74-98-6

CHEMICAL FAMILY: PARAFFIN SERIES HYDROCARBON

CHEMICAL NAME: PROPANE CHEMICAL FORMULA: C3H8

SECTION II HAZARDOUS COMPONENTS

INGREDIENT **PERCENT** TLV (PPM) LIQUEFIED PETROLEUM GAS 100 1000

*** PHYSICAL HAZARD DUE TO FLAMMABLE NATURE. FLAMMABLE WHEN COMBINED WITH AIR. ***

SECTION III PHYSICAL DATA

BOILING RANGE:

-43.7 F

SPECIFIC GRAVITY (H2O = 1.00):

0.508

VAPOR PRESSURE @ 70 DEG F: VAPOR DENSITY (AIR = 1.00): 108 PSIG 1.522

PERCENT VOLATILE BY VOLUME: 100% SOLUBILITY IN WATER @ 70 °F:

0.008%

Revision Date: Dec-2006

EVAPORATION RATE: > 1 (ETHYL ETHER = 1.0)

APPEARANCE & ODOR: CLEAR, COLORLESS LIQUEFIED GAS WITH SWEET PETROLEUM ODOR.

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (METHOD):

-156 F (OPEN CUP)

LOWER EXPLOSION LIMIT:

2.2% (VOL.) GAS IN AIR

UPPER EXPLOSION LIMIT:

9.5% (VOL.) GAS IN AIR

EXTINGUISHING MEDIA:

DRY CHEMICAL EXTINGUISHER (B-C), WATER

SPECIAL FIRE FIGHTING PROCEDURES

STOP THE RELEASE OF MATERIALS IF POSSIBLE. COOL THE VAPOR SPACE OF THE STORAGE CONTAINER WITH WATER SPRAY. AVOID ACCUMULATION OF UNBURNED MATERIALS. REMOVE PERSONNEL IN GENERAL AREA. OBSERVE MAXIMUM ISOLATION WHEN EXTINGUISING FIRE. EXPANSION OF LIQUID AND CHANGE OF STATE FROM LIQUID TO VAPOR WILL ALLOW COMBUSTIBLE MIXTURE TO ENCOMPASS A LARGE AREA.

UNUSUAL FIRE AND EXPLOSION HAZARDS

VAPORS ARE HEAVIER THAN AIR AND MAY TRAVEL ALONG THE GROUND OR MAY BE MOVED BY VENTIL ATION SYSTEMS AND IGNITED BY PILOT LIGHTS, OTHER FLAMES, SPARKS, HEATERS, SMOKING, ELECTRIC MOTORS, STATIC DISCHARGE, OR OTHER IGNITION SOURCES AT LOCATIONS DISTANT FROM MATERIAL HANDLING POINT.

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REVISION DATE: Dec-2006

SECTION V HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE

INGESTION- ASPIRATION HAZARD!

INHALATION- INHALATION OF VAPOR MAY PRODUCE ANESTHETIC EFFECTS AND FEELING OF EUPHORIA. PROLONGED OVEREXPOSURE CAN CAUSE RAPID BREATHING, HEADACHE, DIZZINESS, NARCOSIS, UNCONSCIOUSNESS, AND DEATH FROM ASPHYXIATION, DEPENDING ON CONCENTRATION AND TIME OF EXPOSURE.

SKIN CONTACT- CONTACT WITH EVAPORATING LIQUID CAN CAUSE FROSTBITE.

EYE CONTACT- LIQUID CAN CAUSE SEVERE IRRITATION, REDNESS, TEARING, BLURRED VISION, AND POSSIBLE FREEZE BURNS.

EMERGENCY FIRST AID PROCEDURES

INGESTION- DO NOT INDUCE VOMITING. CONTACT A PHYSICIAN IMMEDIATELY.

INHALATION- REMOVE TO FRESH AIR. IF BREATHING HAS STOPPED, RESTORE BREATHING AT ONCE. ADMINISTER OXYGEN AND GET MEDICAL HELP.

SKIN CONTACT- FOR LIQUID CONTACT, WARM AREAS GRADUALLY AND GET MEDICAL ATTENTION IF THERE IS EVIDENCE OF TISSUE DAMAGE. FLUSH AREA WITH PLENTY OF WATER

EYE CONTACT- FOR LIQUID CONTACT, IRRIGATE WITH RUNNING WATER FOR MINIMUM OF 15 MINUTES. CONSULT PHYSICIAN IMMEDIATELY IF FROSTBITE OCCURS.

SECTION VI REACTIVITY DATA

STABILITY: STABLE

HAZARDOUS POLYMERIZATION: CAN NOT OCCUR

INCOMPATIBILITY (MATERIALS TO AVOID): NONE.

HAZARDOUS DECOMPOSITION PRODUCTS: CARBON MONOXIDE, VOLATILE HYDROCARBON

VAPORS

CONDITIONS TO AVOID: HIGH HEAT, SPARK, AND OPEN FLAMES

SECTION VII SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

AVOID SOURCES OF IGNITION - VENTILATE AREA. USE WATER FOG TO EVAPORATE OR VENTILATE. PROTECT BODY AGAINST CONTACT WITH LIQUID. IF CONFINED SPACE - USE SELF CONTAINED BREATHING APPARATUS. CONSULT LOCAL FIRE AUTHORITIES.

WASTE DISPOSAL

- (1) MECHANICAL RECOVERY
- (2) FLARE-OFF AT SAFE LOCATION (VAPORS)
- (3) EXHAUST TO ATMOSPHERE IN SAFE LOCATION (NO OPEN FLAMES)

** COMPLY WITH ALL STATE AND LOCAL REGULATIONS **

Revision Date: Dec-2006

DIVERSIFIED CPC INTERNATIONAL, INC.

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MATERIAL SAFETY DATA SHEET

AERON A-108 (Propane)

REVISION DATE: Dec-2006

SECTION VIII SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: NIOSH APPROVED SELF-CONTAINED BREATHING

APPARATUS.

PROTECTIVE GLOVES: IMPERVIOUS, INSULATED GLOVES RECOMMENDED

EYE PROTECTION: FACESHIELD OR GOGGLES RECOMMENDED

OTHER: IMPERVIOUS CLOTHING FOR PROLONGED OR REPEATED

CONTACT

VENTILATION

MECHANICAL: PROVIDE AS NEEDED TO KEEP CONCENTRATION IN AIR BELOW TLV AND LEL

LOCAL EXHAUST: CONTINUOUS VENTILATION RECOMMENDED

SPECIAL: EXPLOSION PROOF FANS AND MOTORS

SECTION IX SPECIAL PRECAUTIONS

COMPLY WITH STATE AND LOCAL REGULATIONS COVERING LIQUEFIED PETROLEUM GASES. COMPLY WITH NFPA PAMPHLET #58.

STORE SMALL CONTAINERS IN WELL-VENTILATED AREAS, AWAY FROM HEAT OR SOURCES OF IGNITION. PROHIBIT SMOKING IN AREAS OF STORAGE OR USE.

SECTION X MISCELLANEOUS INFORMATION

TRANSPORT INFORMATION

PETROLEUM GASES, LIQUEFIED

2.1, FLAMMABLE GAS, UN1075 LABELED / PLACARDED FLAMMABLE GAS

NPCA - HMIS RATINGS



(PERSONAL PROTECTION INFORMATION TO BE SUPPLIED BY THE USER)

REGULATORY INFORMATION

THE INGREDIENTS LISTED IN SECTION 2 ARE REPORTED/INCLUDED IN THE U.S. TSCA INVENTORY AND CANADIAN DOMESTICS SUBSTANCE LIST.

THIS PRODUCT IS DEFINED BY OSHA IN 29 CFR 1910.1200c AS A FLAMMABLE GAS. USE OF THIS PRODUCT MAY REQUIRE COMPLIANCE WITH 29 CFR 1910.119, PROCESS SAFETY MANAGEMENT OF HIGHLY HAZARDOUS CHEMICALS.

Diversified CPC International, Incorporated



24338 West Durkee Road | Channahon, IL 60410 | 815-423-5991

Product Specification

AERON A-108

Version 1 Revision 3

PROPERTY	SPECIFICATION	TYPICAL ANALYSIS	TEST METHOD
COMPOSITION WGT%			
ETHANE	0.5% Max	< 0.1%	GAS CHROMATOGRAPHY
PROPANE	95.0% Min	97.5%	GAS CHROMATOGRAPHY
BUTANES	4.0% Max	2.5% Max	GAS CHROMATOGRAPHY
VAPOR PRESSURE @ 70° F. (PSIG)	105 - 111 PSIG	108 - 111 PSIG	ASTM D-1267
SULFUR (PPM)	5 Max	< 1	ASTM D-4468
MOISTURE (PPM)	5 Max	< 3	ELECTRONIC
ODOR	PASS	PASS	PANEL

Effective Date: January 2, 2008 Approved by: William E. Madigan



Hydrocarbon Propellants

Properties of the Hydrocarbons

	Propane	I-Butane	N-Butane
Chemical Formula	C_3H_8	C_4H_{10}	C_5H_{12}
Molecular weight	44.1	58.1	58.1
Boiling Point(°F)	-43.7	10.9	31.1
Vapor Pressure @ 70°F (psig)	109.3	31.1	16.9
Liquid Density @ 70°F (g/cc)	0.51	0.56	0.58
Flammability in air			
LEL	2.2	1.8	1.9
UEL	9.5	8.4	8.5
Flash Point (°F)	-156	-117	-101
Kauri-Butanol value	15	18	20
Solubility in Water (wt.% @ 70°F,			
autogeneous pressure)0.007		0.008	0.008



EUROPEAN COMMISSION

DIRECTORATE-GENERAL XXIV
CONSUMER POLICY AND CONSUMER HEALTH PROTECTION
Directorate B - Scientific opinions on health matters
Unit B3 - Management of scientific committees II

SCIENTIFIC COMMITTEE ON FOOD

SCF/CS/ADD/MsAd/178 final 29/03/99

Opinion on propane, butane and iso-butane as propellant gases for vegetable oil-based aerosol cooking sprays and water-based emulsion cooking sprays

(expressed on 24 March 1999)

SCIENTIFIC COMMITTEE ON FOOD

SCF/CS/ADD/MsAd/178 Final

Opinion on

propane, butane and iso-butane as propellant gases for vegetable oil-based aerosol cooking sprays and water-based emulsion cooking sprays

(expressed on 24 March 1999)

Terms of Reference

To advise the Commission on the safety in use of propane, butane and iso-butane as hydrocarbon propellant gases for vegetable oil-based aerosol cooking sprays and for water-based emulsion cooking sprays.

Background

When baking items such as cakes, biscuits etc., or when frying other food products that are likely to stick to the utensils, a fat film is required between the pan and the food products to achieve the necessary release of the food when the process is completed. Such a fat film can be applied by spraying an aerosol of food release oils or emulsions. A propellant gas is necessary to force the release liquid through the nozzle of the dispenser. To obtain an appropriate coverage of the frying or baking utensil a substantial pressure is required.

On the basis of Directive 95/2/EC.¹ the only acceptable gases to be used in connection with foodstuffs are carbon dioxide, argon, helium, nitrogen, nitrogen dioxide and oxygen. However none of these gases can produce the necessary pressure in the spray to obtain an homogeneous distribution of the fat film on the utensil. Butane, isobutane and propane are technological alternative hydrocarbon propellant gases. Chemical specification data of these propellants were provided to the Committee.²

Under the provisions contained in Directive 89/107/EEC³, the United Kingdom and Sweden approved a temporary national authorisation for the use of these gases for use in cooking sprays.

Safety assessment

The Committee has not considered propane, butane and isobutane as propellants but they have been evaluated in the context of their use as extraction solvents for which the SCF agreed an acceptable residue level per substance of *Img /kg* in food consumed.⁴

The Committee was provided with residue data of the propellants after use in cooking representative foods. The data show that total hydrocarbons are present in the prepared foods in amounts below 0.1 mg residual hydrocarbon/kg cooked food. In most cases the amounts are substantially less than 0.1 mg/kg food. It is also shown that propane is present in lower concentrations in both the propellant blends and in the cooked foods compared with the two other hydrocarbons.

Effect of Time and Temperature on Propellant Residues

The hydrocarbon propellants used are, at all ambient indoor temperatures and at normal atmospheric pressure, in the gaseous state. The least volatile of the group, n-butane, has a boiling point of -0.5° C at 20° C; The others boil at significantly lower temperatures. Accordingly also the hydrocarbons that are dissolved in fat or oil at ambient temperatures are present in the vapour state.

In the containers (aerosol dispensers) the propellants are present in the liquid state but when the content of the container is discharged, the released hydrocarbon propellant mostly vapourizes into the atmosphere leaving only a small amount dissolved in the cooking spray concentrate which is deposited on the surface of the cooking utensil.

The residual levels of hydrocarbon propellants in the water-based sprays would be expected to be less than those in the oil-based products because of the their low solubility in water. This is confirmed by the analytical data on the levels of residues detected in the cooked food models.

Since the solubility of the hydrocarbon propellant gases in the concentrate decreases with temperature the propellants are expelled from the cooking spray during heating. In most cases temperatures of 200 to 220°C are reached. The limit of solubility of the propellants in the spray concentrate at these temperatures is reached in the time it normally takes to prepare the fried or baked foods and thus the propellant residues are reduced to a very low level during the time of preparation of the foods. In addition during frying or baking, the food and cooking spray concentrate are mixed and a portion of any residual hydrocarbon propellant will be transferred to the food. This will dilute the hydrocarbon to a concentration much less than its limit of solubility in the concentrate. No reaction of the hydrocarbon propellant gases with food components at cooking temperatures is to be expected.

Safety in use

The Committee was provided with information on flammability and wishes to draw attention to the fact that the oil-based aerosols may carry some risk of flammability.^{5,6}

· 200 100 100 100 100

Conclusion

In view of the low residue level of propellant gases the SCF has no toxicological concerns about the use of water-based emulsion sprays and oil-based aerosol sprays for baking and frying purposes, which contain propane, butane or iso-butane.

References

- 1. European Union. European Parliament and Council Directive 95/2/EC on food additives other than colours and sweeteners, February 20, 1995. Official Journal L061, 18.03.1995.
- 2. Specifications on iso-butane, propane, butane, provided by MAFF, Joint Food Safety and Standards Group, Additives and Novel Foods Division, London, U.K.

- 3. Council Directive 89/107/EC on the approximation of the laws of the Member States concerning food additives authorized for use in foodstuffs intended for human consumption. December 21, 1998. Official Journal L 040, 11.02.1989.
- 4. Commission of the European Communities. Second report on Extraction Solvents. Reports of the Scientific Committee for Food, Twenty-ninth Series. (OPOCE, Luxembourg, 1992, Cat. N° EUR 14482).
- Flammability of water-based aerosol cooking oils. Report by the «Laboratory of the Government Chemist, » Teddington, U.K., January 24,1997
- 6. Safety examination of water-based aerosol cooking sprays, Report by the « Health & Safety Executive », London, UK, February 2, 1997